

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| | | |
|---|---|--|
| Applicant's or agent's file reference P105168.W002 | FOR FURTHER ACTION | |
| see Form PCT/ISA/220 as well as, where applicable, item 5 below. | | |
| International application No. PCT/GB2008/051042 | International filing date (day/month/year) 07/11/2008 | (Earliest) Priority Date (day/month/year) 09/11/2007 |
| Applicant PURSUIT DYNAMICS PLC | | |

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

the international application in the language in which it was filed
 a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. **Certain claims were found unsearchable** (See Box No. II)

3. **Unity of invention is lacking** (see Box No III)

4. With regard to the **title**,

the text is approved as submitted by the applicant
 the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,



the text is approved as submitted by the applicant



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 5

as suggested by the applicant

as selected by this Authority, because the applicant failed to suggest a figure

as selected by this Authority, because this figure better characterizes the invention

b. none of the figures is to be published with the abstract

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2008/051042

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61L2/22 B05B7/06 B05B1/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A61L B05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| X | WO 2005/082546 A (PURSUIT DYNAMICS PLC [GB]; FENTON MARCUS BRIAN MAYHALL [GB]; HEATHCOTE) 9 September 2005 (2005-09-09) figures 16-19, 21 ----- | 1-36 |
| X | WO 94/08724 A (CASEY ALAN PATRICK [AU]) 28 April 1994 (1994-04-28) abstract; figures page 12, lines 14-23 page 15, lines 13-21 ----- | 1-36 |
| A | WO 01/76764 A (CHROBAK JULIUS [SK]) 18 October 2001 (2001-10-18) cited in the application page 1 - page 2; claims; figure 2 ----- -/- | 1-36 |

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

20 February 2009

05/03/2009

Name and mailing address of the ISA/
European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Nissen, Vagn

INTERNATIONAL SEARCH REPORTInternational application No
PCT/GB2008/051042**C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| A | WO 03/072952 A (PURSUIT DYNAMICS PLC [GB]; TODMAN MICHAEL TORR [GB]; FENTON MARCUS BRI) 4 September 2003 (2003-09-04) the whole document ----- | 1-36 |
| A | US 6 405 944 B1 (BENALIKHOUDJA KARIM [FR]) 18 June 2002 (2002-06-18) the whole document ----- | 1-36 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2008/051042

| Patent document cited in search report | | Publication date | | Patent family member(s) | | Publication date |
|--|----|------------------|--|---|--|--|
| WO 2005082546 | A | 09-09-2005 | AU CA EP US | 2005216699 A1 2556673 A1 1718413 A1 2007210186 A1 | | 09-09-2005 09-09-2005 08-11-2006 13-09-2007 |
| WO 9408724 | A | 28-04-1994 | AT BG BR CA CZ DE DE EP ES FI HU JP JP NO NZ PL RU US | 190866 T 99557 A 9307239 A 2147008 A1 9500966 A3 69328185 D1 69328185 T2 0664734 A1 2143512 T3 951721 A 72516 A2 3264930 B2 8502203 T 951425 A 256646 A 308351 A1 2128087 C1 5735468 A | | 15-04-2000 29-03-1996 25-05-1999 28-04-1994 13-03-1996 27-04-2000 21-12-2000 02-08-1995 16-05-2000 01-06-1995 28-05-1996 11-03-2002 12-03-1996 11-04-1995 25-06-1996 24-07-1995 27-03-1999 07-04-1998 |
| WO 0176764 | A | 18-10-2001 | CZ CZ SK | 20023443 A3 14882 U1 5272000 A3 | | 18-06-2003 12-01-2005 03-12-2001 |
| WO 03072952 | A | 04-09-2003 | AU CA JP | 2003207347 A1 2477568 A1 2006504019 T | | 09-09-2003 04-09-2003 02-02-2006 |
| US 6405944 | B1 | 18-06-2002 | AU AU CA DE DE EP ES FR WO PT | 760330 B2 9078998 A 2301744 A1 69819017 D1 69819017 T2 1007220 A1 2212831 T3 2767492 A1 9910104 A1 1007220 T | | 15-05-2003 16-03-1999 04-03-1999 20-11-2003 05-08-2004 14-06-2000 01-08-2004 26-02-1999 04-03-1999 31-03-2004 |

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION

See paragraph 2 below

International application No.
PCT/GB2008/051042

International filing date (day/month/year)
07.11.2008

Priority date (day/month/year)
09.11.2007

International Patent Classification (IPC) or both national classification and IPC
INV. A61L2/22 B05B7/06 B05B1/06

Applicant

PURSUIT DYNAMICS PLC

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Date of completion of
this opinion

see form
PCT/ISA/210

Authorized Officer

Nissen, Vagn

Telephone No. +49 89 2399-8619



Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 the international application in the language in which it was filed
 a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).
2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 a sequence listing
 table(s) related to the sequence listing
 - b. format of material:
 on paper
 in electronic form
 - c. time of filing/furnishing:
 contained in the international application as filed.
 filed together with the international application in electronic form.
 furnished subsequently to this Authority for the purposes of search.
4. In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/GB2008/051042

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or
industrial applicability; citations and explanations supporting such statement**

1. Statement

| | | |
|-------------------------------|-------------|-----------------------------|
| Novelty (N) | Yes: Claims | |
| | No: Claims | <u>1, 15, 28, 29, 34-36</u> |
| Inventive step (IS) | Yes: Claims | |
| | No: Claims | <u>1-36</u> |
| Industrial applicability (IA) | Yes: Claims | <u>1-36</u> |
| | No: Claims | |

2. Citations and explanations

see separate sheet

Re Item V.

Reference is made to the following documents:

D1 : WO 2005/082546 A (PURSUIT DYNAMICS PLC [GB]; FENTON MARCUS BRIAN MAYHALL [GB]; HEATHCOTE) 9 September 2005 (2005-09-09)
D2 : WO 94/08724 A (CASEY ALAN PATRICK [AU]) 28 April 1994 (1994-04-28)
D3: WO 01/76764 A (CHROBAK JULIUS [SK]) 18 October 2001 (2001-10-18)
cited in the application
D4: WO 03/072952 A (PURSUIT DYNAMICS PLC [GB]; TODMAN MICHAEL TORR [GB]; FENTON MARCUS BRI) 4 September 2003 (2003-09-04)
D5: US-B1-6 405 944 (BENALIKHOUDJA KARIM [FR]) 18 June 2002 (2002-06-18)

1. Coaxial nozzles for providing a mist of a liquid by entraining the liquid from one channel into a gas moving at high velocity in another channel is well-known [vide D1-D5].
 - 1.1 D1 discloses several designs for such nozzles, some of which comprising a throat portion in the center fluid channel which has a smaller cross sectional area than both the inlet and outlet of said channel. The area ratio between the throat portion and the outlet is not explicitly mentioned, but could be assumed to be within the range of 2:3 to 1:4. The inclination between the center channel and the surrounding channel(s) appears to be in the range of 15-25 degrees [figures 16-19, 21]. In any event it is evident to the skilled person that various characteristics of the droplet formation may be obtained by varying the angle [See corresponding text to the figures on pages 42-45]. The device according to D1 can be used to generate a mist if a disinfectant [page 63, 1st §]. It is also foreseen that the outer channel may have a throat portion [see the figures].
 - 1.2 Accordingly, at least the subject-matter of independent claims 1, 15, 28, 29 and 34-36 lacks novelty (Art. 33(2) PCT).
2. A similar disclosure is found in D2 [page 12, lines 14-23; page 15 lines 13-21 and figures] (Art. 33(2) PCT). Admittedly, D2 does not explicitly mention the use of the

device for sterilising purposes but rather for use in a combustion engine. Nevertheless, the device can be considered suitable for such purpose and alternative uses in general have been implied [page 1, lines 8-10].

3. Dependent claims 2-14, 16-27 and 30-33 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step.
 - 3.1 In said claims only slight constructional change in the subject matter of the independent claims are defined and which come within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can readily be foreseen. Consequently, the subject-matter of said dependent claims at least lacks an inventive step (Art. 33(3) PCT).

Possible steps after receipt of the international search report (ISR) and written opinion of the International Searching Authority (WO-ISA)

| | |
|---|---|
| General information | For all international applications filed on or after 01/01/2004 the competent ISA will establish an ISR. It is accompanied by the WO-ISA. Unlike the former written opinion of the IPEA (Rule 66.2 PCT), the WO-ISA is not meant to be responded to, but to be taken into consideration for further procedural steps. This document explains about the possibilities. |
| Amending claims under Art. 19 PCT | Within 2 months after the date of mailing of the ISR and the WO-ISA the applicant may file amended claims under Art. 19 PCT directly with the International Bureau of WIPO. The PCT reform of 2004 did not change this procedure. For further information please see Rule 46 PCT as well as form PCT/ISA/220 and the corresponding Notes to form PCT/ISA/220. |
| Filing a demand for international preliminary examination | <p>In principle, the WO-ISA will be considered as the written opinion of the IPEA. This should, in many cases, make it unnecessary to file a demand for international preliminary examination. If the applicant nevertheless wishes to file a demand this must be done before expiry of 3 months after the date of mailing of the ISR/ WO-ISA or 22 months after priority date, whichever expires later (Rule 54bis PCT). Amendments under Art. 34 PCT can be filed with the IPEA as before, normally at the same time as filing the demand (Rule 66.1 (b) PCT).</p> <p>If a demand for international preliminary examination is filed and no comments/amendments have been received the WO-ISA will be transformed by the IPEA into an IPRP (International Preliminary Report on Patentability) which would merely reflect the content of the WO-ISA. The demand can still be withdrawn (Art. 37 PCT).</p> |
| Filing informal comments | After receipt of the ISR/WO-ISA the applicant may file informal comments on the WO-ISA directly with the International Bureau of WIPO. These will be communicated to the designated Offices together with the IPRP (International Preliminary Report on Patentability) at 30 months from the priority date. Please also refer to the next box. |
| End of the international phase | At the end of the international phase the International Bureau of WIPO will transform the WO-ISA or, if a demand was filed, the written opinion of the IPEA into the IPRP, which will then be transmitted together with possible informal comments to the designated Offices. The IPRP replaces the former IPER (international preliminary examination report). |
| Relevant PCT Rules and more information | Rule 43 PCT, Rule 43bis PCT, Rule 44 PCT, Rule 44bis PCT, PCT Newsletter 12/2003, OJ 11/2003, OJ 12/2003 |